

REMARKS

Claims Status and Affirmation of Election:

Claims 1-16, 23, 25, 27-30, 33 and 35-40 are pending in this application. We affirm our election of the pending claims and respectfully suggest that new claims 35-40 are properly grouped with the elected claims.

Claims 17-22, 24, 26, 31, 32 and 34 are canceled without prejudice as being drawn to non-elected claims. We reserve our right to present these and similar claims in one or more continuing applications.

Claims 1, 2, 4, 5, 9, 14, 15, 16, 23, 27 and 29 are amended without prejudice, and claims 35-39 are newly presented.

New independent claim 37 is very loosely modeled after claim 23. (Of course, features and limitations from claim 23 should not be read into claim 37, and vice versa.)

New independent claim 40 is a detection method which recites an act of averaging, in combination with other features. Claim 33 recites a very loosely related feature. (Of course, features and limitations from claim 33 should not be read into claim 40, and vice versa.)

Formal Rejections:

Claims 1-16, 23, 25, 27-30 and 33 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. We traverse these rejections.

These claims constitute statutory process claims for at least the following reasons: the claims recite a process limited to a practical application, and the process produces a concrete, tangible and useful result.

In claim 1, the process embeds identification data in video through a number of acts. This results in embedded identification data that it is imperceptible upon real-time rendering, but is perceptible upon examination of a first or second frame. In claim 23, the process marks content with auxiliary data in such a manner to result in embedded data that is humanly perceptible if examined in a finite segment or frame of the content, but is embedded in the content so as to be humanly imperceptible when examined as the content is rendered or projected in real-time. In claim 27, the process steganographically

hides data in media content. The data remains perceptible upon individual examination of the at least two media segments but consciously imperceptible as the media content is rendered in real time since the data is below a perceptual threshold due to masking content.

The acts recited in these claims produce a concrete, tangible and useful result, e.g., to embed data in video, to mark content with auxiliary data, and to hide data in media content, resulting in changed video or content.

Withdrawal of these 35 U.S.C. § 101 rejections is respectfully requested.

Art-based Rejections:

Claims 1-16, 23, 25, 27-30 and 33 stand rejected as being anticipated by U.S. Patent No. 6,950,532 (hereafter referred to as “the Schuman patent”). We respectfully traverse these rejections.

Claim 23 in view of the Schuman patent

Claim 23 recites – in combination with other features – a method of marking content with auxiliary data. The method is characterized in that the auxiliary data is embedded in the content prior to distribution or projection of the content so as to be humanly perceptible if examined in a finite segment or frame of the content, but is embedded in the content so as to be humanly imperceptible when examined as the content is rendered or projected in real-time.

The Office Action cites to the Schuman patent at Col. 6, lines 24-34 and Figure 8. Please see the Office Action on page 7, under the heading “As to claim 23, Schuman shows”. We respectfully submit that this passage and figure do not teach or suggest the combination recited in claim 23.

The cited Col. 6 passage discusses introducing anomalies or modulation via a projected image. These are understood to be introduced via a so-called “disrupter”. The disrupter is understood to disrupt a projection or projection source during projection, which results in a projected image including anomalies or modulation. See, e.g., Col. 5, lines 11-14: “The present invention solves this problem by generating optical effects that

may be invisible to human but may also be difficult for an IRD to record”; see also Col. 8, lines 52-64; see also Figs. 1-6.

This is unlike the combination recited in claim 23, which embeds auxiliary data in content prior to distribution or projection of the content

Fig. 8 – and its corresponding Col. 11 line 62 - Col. 12, line 25 description – modifies content to assist in presentation of effects at display time. See Col. 12, lines 11-12.

But the passage does not suggest that the auxiliary data is embedded so as to be humanly perceptible if examined in a finite segment or frame of the content, but is embedded in the content so as to be humanly imperceptible when examined as the content is rendered or projected in real-time.

It appears that it is the disrupter which is used to create a humanly imperceptible auxiliary signal. For example, see Col. 12, lines 14-15: “The disrupter may interpret and act upon the effects and the security information.”; Col. 12, line 1-3: “The disruption techniques and data may be generated for a variety of independent disruption mechanisms.”; and Abstract: “The disruption processor inserts disruptive content to the input content creating output content that impedes the ability of optical recording devices to make useful copies of output content.”

Thus, the modifications discussed in Fig. 8 and at Col. 12, lines 11-12, are not understood to embed auxiliary data in content so as to be humanly perceptible if examined in a finite segment or frame, but imperceptible when examined during rendering or projection in real-time.

We respectfully request that claim 23 be allowed.

Claim 1 in view of the Schuman patent

Claim 1 recites a method of embedding identification data in video. The method includes embedding the identification data in a first video frame prior to distribution or projection of the video, the embedded identification data being visually perceptible upon examination of the first frame; selecting a second video frame, wherein the first and second video frames are separate frames; and embedding the identification data in the second video frame prior to distribution or projection of the content so as, the embedded

identification data being visually perceptible upon examination of the second frame, wherein the identification data is generally imperceptible upon real-time rendering of the video.

The cited Col. 6 passage discusses introducing anomalies or modulation via a projected image. These are understood to be introduced via a so-called “disrupter”. The disrupter is understood to disrupt projection or projection source during projection, which results in a projected image including anomalies or modulation. See, e.g., Col. 5, lines 11-14: “The present invention solves this problem by generating optical effects that may be invisible to human but may also be difficult for an IRD to record”; see also Col. 8, lines 52-64; see also Figs. 1-6.

These examples are unlike the combination recited in claim 1, which embeds auxiliary data in content prior to distribution or projection of the content.

Fig. 8 – and its corresponding Col. 11 line 62 – Col. 12, line 25 description – modifies content to assist in presentation of effects at display time. See Col. 12, lines 11-12. But this passage does not suggest that the auxiliary data is embedded so as to be humanly perceptible upon examination of the first or second frames, but is embedded in the content so as to be humanly imperceptible when examined as the content is rendered or projected in real-time.

We respectfully request that claim 1 be allowed.

Claims 27 and 37 in view of the Schuman patent

Claims 27 and 37 are also believed allowable over the Schuman patent.

For example, claim 37 recites, in combination with other features, an act of embedding auxiliary data in the content through modifications of portions of the content. The modifications occur prior to distribution or projection of the content. Moreover the modifications are humanly perceptible if examined in a finite segment or frame of the content, but are provided in the content so as to be humanly imperceptible when examined as the content is rendered or projected in real-time.

The Schuman patent is not understood to teach or suggest such a combination.

Claim 27 recites a method of steganographically hiding data in media content. The media content comprises a plurality of segments including masking content. The

method is characterized in that at least two of the media segments are provided with the data prior to distribution or projection of the media content, wherein the data comprises humanly perceptible data, and wherein the data remains perceptible upon individual examination of the at least two media segments but consciously imperceptible as the media content is rendered in real time since the data is below a perceptual threshold due to the masking content.

The Schuman patent is not understood to teach or suggest such a combination.

Remaining Claims

The remaining claims are also believed to recite patentable combinations.

For example, claim 2 recites that the act of selecting comprising selecting the second frame so that the repetition of the embedded identification data is imperceptible to the human conscious mind when rendered. The cited Col. 6, lines 31-33 passage (“human eye may not detect them”) relies on “reduced intensity” of generated images and not repetition of embedded identification data.

Claim 3 recites that the identification data (of claim 1) is embedded in the same frame location in each of the first and second frames. The cited Col. 6, lines 58-67 passage does not discuss this feature. Rather, it discusses identifying information may indicate a location and time that an event was recorded. (The parenthetical in page 5 of the Office Action regarding if a human is to perceive a message, the message has to be in the same location from one frame to the next, may evidence a misunderstanding of claim 1. Claim 1 indicates that embedded data is preferably imperceptible when rendered in real-time.)

Amended claim 5 clarifies that the character recognition is device-aided character recognition, e.g., OCR or other character recognition. This is unlike a human perceiving a message as stated in the Office Action at page 5.

Like claim 2, discussed above, claim 8 recites that the second frame is selected so that the repetition of the embedded identification data is imperceptible to the unconscious human mind. The cited passage (Col. 6, lines 24-36) seems to rely on reduced intensity instead.

Claim 12 recites that each of the plurality of identifiers is embedded to be spatially located in a separate frame location with respect to each other. We see no discussion of this combination in the cited Col. 6, lines 58-67 passage.

Claim 33 recites a detector to detect the data provided according to claim 28. The detector averages a plurality of video frames so that provided data becomes consciously perceptible. The cited passage (Col. 3, lines 43-49) discusses selecting a pattern for inserting a watermark, which may involve a dynamic analysis of source content. This process seems concerned with watermarking embedding, and not with watermark detection. Moreover, we see no discussion there on averaging a plurality of video frames in the manner claimed.

Claim 16 recites a detection method for the video embedded according to claim 1. The detection method includes averaging a plurality of the video frames including the first and second frames, the averaging improves the signal to noise ratio of the identification data to video content. The cited Col. 6, lines 33-43 does not discuss averaging frames to improve signal to noise ratio of the identification data to video content.

New claim 40 recites a method to detect embedded information. The method includes – in combination with other features – an act of averaging portions of content. This claim is also believed allowable over the previously cited passages including, e.g., Col. 3, lines 43-49 and Col. 6, lines 33-43.

Allowance of the remaining claims is respectfully requested.

Conclusion:

An early Notice of Allowance is respectfully requested. In the meantime, the Examiner is invited to contact the undersigned with any questions.

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Respectfully submitted,

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